



Mazak



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UBR21

University of Birmingham



Success Inspires Hard Work

Newsletter September 2017

The team arrived at the Silverstone competition in July 2017 with high hopes of a 700 point finish and after some minor issues were ironed out at testing the team were confident of achieving that aim.

First came the static events with a top half finish in the cost report and business presentation delivering a good starting point followed by our first ever entry in to the design final, leading us to finishing fourth overall.

The dynamic events began on Saturday with a brilliant morning starting with the acceleration which was completed in 4.476 seconds, finishing 7th overall. This was then followed by the skid pad test, done in a figure of eight shape, which was done in 5.239 seconds which placed us 2nd. Saturday was finished off with the sprint event, a timed lap of the one kilometre track where we posted a blistering time of 56.423 placing us 2nd again. After, some of the design judges, including F1 aerodynamics legend Willem Toet, came to our garage and spent time discussing the car with the team, and loving the finish on our aero package!

Having finished second in the sprint we started endurance second last, just before our main competitors Cardiff Racing. The team watched nervously as some of the biggest teams there struggled to compete, with many having to retire before the finish. However our car performed fantastically, just like our drivers, and we finished first place, nearly a second a lap quicker than second place!

These results together meant that we not only won the overall dynamics events but placed second overall, the teams best ever finish! We went home smashing our original points target by over 130 and three trophies to our lab; endurance winner, overall dynamics winner and second place overall. A truly successful year.





Big thanks to H. Forsyth Photography for the photos at competition, check him out!

After the success of UBR20 the team celebrated as they deserved to but straight after those who would be part of the 2017/18 team, UBR21, got back to work. The team has some exciting changes planned including new aero developments on our aero package, upgraded powertrain and iterations of our highly successful chassis.

As with every new year there is a new team and below are the key players, who you'll get a chance to learn more about in our 'Meet The Team' section throughout the year.

Team Leader - David Owen

Technical Director - George Betts

Head of Chassis - Ed Berwick

Head of Powertrain - Ben Nightingale

Head of Vehicle Dynamics - Michael Okeke

Head of Aerodynamics - Andrew Evans

Head of Drivetrain - James Davies

Head of Sponsorship and Business - Aldam Mills

Head of Cost Report - Bulraj Mahe and Hannah Swinbourne





**David Owen -
Team Leader**

David takes over as team leader having headed up a successful cost report team last year. He is a third year mechanical engineering student who has been with the team since he joined the university.

In his spare time, if he has any this year, Dave has been known to love a good night out, including Propaganda on a Friday, especially if there's pizza around!



**George Betts -
Technical Director**

George is also a third year mechanical engineering student who has been with the team since his first year. He spent last year working on powertrain, and then his summer with Mahle Powertrain. Plus, having shadowed last year's technical director, he is more than ready for the job.

George is also our chief crane operator who loves to fill out a health and safety form.

Plus, he is the team's Head of Dabbing.

This year will be the third iteration of our carbon fibre monocoque and it will be headed up by third year mechanical engineering student Ed Berwick. We sat down and asked him some questions:

What does your role as Head of Chassis involve?

Overseeing the design and manufacturing of the carbon fibre monocoque. Along with that I will be aiding in the other carbon fibre manufacturing including the aero package and the wheels.

What are the general plans for the chassis this year?

We have a few changes planned this year starting with making a carbon fibre anti-intrusion plate. We will also be looking to make our front roll hoop out of aluminium rather than steel in order to save some weight. With this being our third year of using a carbon fibre monocoque, we will also be looking to optimise our lay up process and fibre orientation.

Why do we use a carbon fibre monocoque?

Before we decided to make a carbon fibre monocoque we used a steel space frame chassis and we decided to make the step up to carbon fibre partly as it was an engineering challenge but more so as it allowed us to up our performance. The carbon fibre monocoque gave us three times the torsional stiffness meaning can create more torque without breaking the chassis and improve our handling.



Yamazaki Mazak UK Ltd. has now been a partner of UBRacing for eight years and have been one of the team's major sponsors.

Mazak manufacture CNC machines as well as laser cutting and manufacturing. They also have developed software to improve the interface and enhance the experience when using their CNC machines, called Mazatrol.

The partnership allows UBRacing to use Mazak for machining so that they we can get our parts to a high finish. This year Mazak helped us to manufacture our front and rear brake discs as well as developing a dry sump system. In the past they have also helped with the manufacture of the uprights.

